

REMARKS

Claims 1-29 are pending in the application. Applicant amends claims 1, 13, and 25 for further clarification. No new matter has been added.

Claim 1 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Applicant amends claim 1 to further clarify the recitation of the invention, which includes removing the objected-to language of “channel data is included in the received data.” Accordingly, Applicant respectfully requests that the Examiner withdraw the § 112, ¶ 1 rejection.

Claims 1-2, 6-10, 12-14, 18-22, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0021682 to Ariyoshi et al. in view of U.S. Patent Application Publication No. 2003/0003942 to Okumura; claims 3-4 and 15-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ariyoshi et al. in view of Okumura, and further in view of U.S. Patent Application Publication No. 2003/0119452 to Kim et al.; and claims 5, 11, 17, and 23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ariyoshi et al. in view of Okumura, and further in view of U.S. Patent Application Publication No. 2003/0012267 to Jitsukawa et al. Applicant amends claims 1 and 13 in a good faith effort to further clarify the invention as distinguished from the cited references, and respectfully traverses the rejections.

Ariyoshi et al. describe a transmission power control technique that includes steps of determining a target SIR by comparing an error rate of received data and a target error, acquiring an estimated SIR by removing an interference from a measured SIR, and controlling the transmission power by comparing the estimated SIR and a target SIR. According to Ariyoshi et al., the target SIR is concretely determined by the following steps:

(1) determining a tentative target SIR by comparing the error rate of the received data and the target error rate,

(2) computing a difference between the tentative target SIR and an average of the estimated SIR, and

(3) if the difference is small, adopting the tentative target SIR as the target SIR, and if the difference is large, adopting a value obtained by correcting the tentative target SIR as the target SIR. Thus, Ariyoshi et al., as cited and relied upon by the Examiner, at least fail to disclose the following characteristic features of the claimed invention,

“determining whether an interval is an interval in which data is being transmitted by a data channel;
...and
controlling the target SIR upon comparing the measured error rate of the pilot and target error rate of the pilot in the interval in which data is not being transmitted and a pilot is being transmitted by the control channel,” as recited in claim 1.

The Examiner contended that the TTI (time transmission interval) described in Ariyoshi et al. is an interval for receiving signals and not transmitting signals, thus disclosing the above-cited determining feature of the claimed invention. In W-CDMA, however, TTI is defined as an interval for transmitting predetermined size of data. The mobile station transmits the predetermined size of data for each TTI, and a block error rate is calculated for each TTI. Thus, Ariyoshi et al., as cited and relied upon by the Examiner, clearly fail to disclose or suggest the claimed feature of “determining whether an interval is an interval in which data is being transmitted by a data channel.”

Regarding the above-cited controlling feature of the claimed invention, the Examiner simply repeated the citation of paragraphs [0048] and [0059] of Ariyoshi et al. as the basis for rejecting this feature without substantively addressing Applicant’s remarks in the previous response. Page 4, lines 9-12 of the Office Action. Again, the cited portions of Ariyoshi et al.

only include description of a “tentative SIR target value” and “average estimated SIR value of the transmission time interval TTI in which the current pre-interference cancellation received signal is contained to update the target SIR value for power control...” based generally on block error rates. Paragraphs [0047]-[0048] of Ariyoshi et al. Therefore, Ariyoshi et al., as cited and relied upon by the Examiner, do not disclose or suggest the claimed feature of “controlling the target SIR upon comparing the measured error rate of the pilot and target error rate of the pilot in the interval in which data is not being transmitted and a pilot is being transmitted by the control channel.”

The Examiner cited Okumura as a combining reference that allegedly discloses upper and lower limits of a target error rate of a pilot and channel data being included in received data, which features were conceded to be absent from the disclosure of Ariyoshi et al. Okumura, as cited and relied upon by the Examiner, only describes, however, a target SIR being controlled by comparing a target error rate and a measured error rate in a data transmission interval and an idle period, respectively.

In other words, even assuming, arguendo, that it would have been obvious to one skilled in the art at the time the claimed invention was made to combine Ariyoshi et al. and Okumura, such a combination would still have failed to disclose or suggest,

“[a] transmission power control method that compares error rate of receive data and target error rate on a receiving side, controls target SIR, and causes a transmitting side to control transmission power in such a manner that measured SIR will agree with the target SIR, comprising the steps of:

determining whether an interval is an interval in which data is being transmitted by a data channel;

comparing the error rate of receive data after decoding and the target error rate of the data and controlling the target SIR by a result of the comparing in the interval in which data is being transmitted by the data channel;

measuring the error rate of a demodulated receive pilot in an interval in which data is not being transmitted and a pilot is being transmitted by a control channel; and

controlling the target SIR upon comparing the measured error rate of the pilot and target error rate of the pilot in the interval in which data is not being transmitted and a pilot is being transmitted by the control channel,” as recited in claim 1. (Emphasis added)

Accordingly, Applicant respectfully submits that claim 1, together with claims 2 and 6-10 dependent therefrom, is patentable over Ariyoshi et al. and Okumura, separately and in combination, for at least the foregoing reasons. Claims 12-13 and 24 incorporate features that correspond to those of claim 1 cited above, and are, therefore, together with claims 14 and 18-22 dependent from claim 13, patentable over the cited references for at least the same reasons.

Furthermore, regarding claims 6 and 18, Okumura describes an upper limit value within a control range of a target signal quality or a value near the upper limit value being adopted as a target signal quality at a time of retransmission. But Okumura does not disclose the target SIR being controlled using a pilot. Thus, Okumura—and correspondingly, the proposed combination of Ariyoshi et al. and Okumura—further fails to disclose,

“providing upper and lower limits of the target error rate of the pilot and controlling the target SIR in such a manner that the measured error rate of the pilot will fall within a range defined by said upper and lower limits,” as recited in claim 6, corresponding features of which are incorporated in claim 18. (Emphasis added)

Accordingly, Applicant respectfully submits that claims 6 and 18 are patentable over the cited references for at least these additional reasons.

Claims 3-5 and 11 depend from claim 1 and claims 15-17 and 23 depend from claim 13. The Examiner cited and relied upon Kim et al. and Jitsukawa et al. as further combining references to specifically address additional features recited in these claims 3-5, 11, 15-17, and 23, respectively. As such, further combinations with these references would still have failed to cure the above-described deficiencies of Ariyoshi et al. and Okumura, even

assuming, arguendo, that such further combinations would have been obvious to one skilled in the art at the time the claimed invention was made. Accordingly, Applicant respectfully submits that claims 3-6, 11-12, 15-18, and 23-24 are patentable over the cited references for at least the foregoing reasons.

Claims 25-29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ariyoshi et al. in view of Okumura, and further in view of U.S. Patent No. 6,697,634 to Hayashi. Applicant amends claim 25 in a good faith effort to further clarify the invention as distinguished from the cited references, and respectfully traverses the rejection.

The Examiner relied upon the description in Hayashi of open-loop and closed-loop transmit power control as alleged suggestion of the claimed switching between data channel and control channel. Hayashi describes changing over transmission power control from a closed loop transmission power control (CL-TPC) to an open loop transmission power control (OL-TPC) under the control of mode switching portion.

Even assuming, arguendo, that it would have been obvious to one skilled in the art at the time the claimed invention was made to combine Ariyoshi et al., Okumura, and Hayashi, such a combination would still have failed to disclose or suggest,

“[a] radio communication apparatus configured to receive a data channel and a control channel, in which the apparatus compares an error rate of receive data and a target error rate, controls a target receiving quality based upon a result of the comparison and causes a transmission apparatus to control transmission power in such a manner that a measured receiving quality agrees with the target receiving quality, said radio communication apparatus comprising:

a unit configured to switch transmission power control between a first transmission power control on a basis of quality measured for the data channel and a second transmission power control on a basis of quality measured for the control channel, wherein

the first transmission power control is executed by first comparing the error rate of receive data in the data channel and the target error rate and controlling the target receiving quality based upon the result of the first comparison, and.

the second transmission power control is executed by second comparing the error rate of a *receive pilot in the control channel* and the target error rate of the pilot and controlling the target receiving quality based upon the result of the second comparison,” as recited in claim 25. (Emphasis added)

Accordingly, Applicant respectfully submits that claim 25, together with claims 26-29 dependent therefrom, is patentable over Ariyoshi et al., Okumura, and Hayashi, separately and in combination, for at least the foregoing reasons.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

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